WHAT IS CLAIMED IS:

1. A device for moving fluids through a microfluidic channel, comprising:

a microfluidic channel having an inlet and an outlet;

a fluid contained within said channel;

and an absorbent material coupled to said outlet of said channel,

whereby when said fluid within said channel initially contacts said absorbent material, a driving force is created which moved said fluid through said channel to said outlet.

2. The device of claim 1, wherein said fluid creates a moving fluid front across said absorbent material as said fluid contacts said material.

3. The device of claim 2, wherein said absorbent material is shaped such that the flow speed of said moving fluid front across said material is controlled by the shape of said material.

4. The device of claim 3, wherein said absorbent material comprises a triangular shape and is positioned such that said moving fluid front expands as fluid is absorbed, hereby increasing the driving force as fluid moved through said channel.

5. A device for providing a constant flow within a microfluidic channel, comprising:

a fluid reservoir;

a first microfluidic channel connected to said reservoir;

and a first passageway for coupling said reservoir to said first channel,

whereby said first passageway is sized such that fluid entering said reservoir from said first channel flows in a smooth constant stream.

6. A device for providing a continuous flow within a microfluidic channel, comprising:

a fluid reservoir having a top surface and a bottom surface;

a first microfluidic channel connected to said reservoir;

and a first passageway for coupling said first channel to said reservoir at a position between said top surface and said bottom surface,

wherein said first passageway is sized such that fluid entering said reservoir from said first channel flows in a smooth, continuous stream.

7. A device for providing a visual indication of the concentration of an analyte in a microfluidic channel, comprising:

a microfluidic detection channel having an inlet and an outlet;

an indicator channel coupled to said detection channel at said inlet;

an indicator channel coupled to said detection channel at said inlet apposite said indicator channel;

a first fluid introduced through said indicator channel into said detection channel toward said outlet;

indicating means representative of second fluid concentration located in proximity to said detection channel,

wherein when said first and second fluids flow within said detection channel toward said outlet, a diffusion pattern is formed indicative of the concentration of

said second fluid within said detection channel such that the diffusion pattern may be compared to said indicating means to determine concentration within said detection channel.

8. The device of claim 7, wherein said indicating means further includes a template having a plurality of viewing windows such that said diffusion pattern within said indicator channel visible within said windows may be compared to said indicating means to determine concentration within said channel.

9. A microfluidic device for joining two or more fluid streams, comprising:

a first channel having an inlet opening and an outlet opening;

a second channel having an inlet opening and an outlet opening;

and a main microfluidic channel having an inlet coupling region for coupling said outlet openings of said first and second channels to said main channel,

wherein said coupling region is sized such that fluid entering said region from either of said first or second channel outlet openings enters said main microfluidic channel without blocking said outlet opening of said other channel.

10. The device of claim 9 wherein said first and second channels are sized such that a substantial portion of the fluid contained within said channels can enter said coupling region without blocking said outlet opening of said other channel.

11. The device of claim 10 wherein said outlet openings of said first and second channels are separated by at least one diameter of one said outlet openings.

12. The device of claim 9 wherein said inlet opening of said first channel is connected to a first reservoir and said inlet opening of said second channel is connected to a second reservoir.

13. The device of claim 12, wherein said inlet openings of said first and second channels comprise surface tension valves.

14. The device of claim 13, wherein the static resistance of said surface tension valves is lower than the dynamic resistance within said first and second channels.

15. The device of claim 12, further comprising driving means, internal to said first and second reservoirs, for driving fluid through said first and second channels into said main microfluidic channel.

16. A device for providing static resistance to flow in a microfluidic system, comprising:

an inlet channel;

an outlet channel;

and a plurality of orifices, each having essentially the same dimensions, located in parallel between said inlet and outlet channels,

whereby said orifices provide a high static resistance than a single orifice but a substantially lower dynamic resistance to flow.